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# Impact of Life Cycle Assessment (LCA) Labelling on U.S. Consumers' Purchase intentions toward Sustainable Denim Jeans

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## Impact of Life Cycle Assessment (LCA) Labelling on U.S. Consumers' Purchase intentions toward Sustainable Denim Jeans

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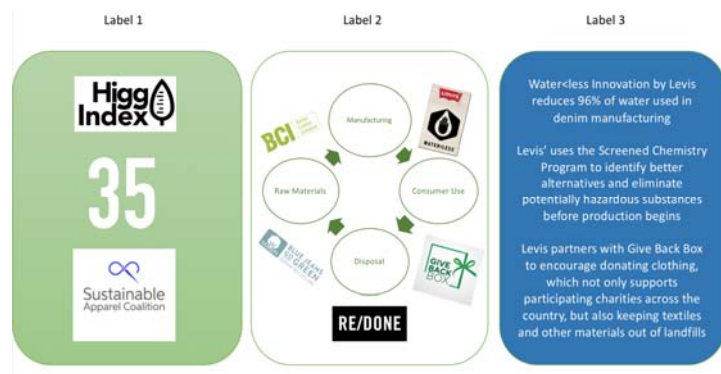
Keywords: LCA, label, denim, consumer

*Introduction and Literature Review.* Product labels featuring eco-conscious communications have been reported in research as an effective marketing tool for generating purchases by eco-conscious consumers (Banerjee & Solomon, 2003; Cai, Xie, & Aguilar, 2017; Sammer & Wüstenhagen, 2005; Yenipazarli, 2015). Cotton Incorporated compiled production and use data to conduct a life cycle assessment (LCA) of cotton apparel to determine ways in which the environmental impact of cotton and cotton apparel production, and consumer cotton apparel use can be improved (Cotton Inc., 2016). The life cycle of denim is different from most other apparel products, denim undergoes desizing/washing, abrasive color loss, color discharge, and chemical finishing (Cotton Inc., 2016). As these processes involve more energy, chemicals, and labor, it is important for consumers to know that denim jeans aren't meant to be fast fashion, quick throw-away products, but should be products made by environmentally friendly processes throughout supply chain (Cotton Inc., 2018). To convey the information of sustainable denim jeans to consumers, a product label indicating the LCA measures and outcomes of sustainable denim jeans is developed in this study. Prior studies indicate that the more knowledgeable about environmental issues a consumer is, the greater his/her purchase intention is toward environmentally friendly products (Mostafa, 2007; Paul & Rana, 2012; Zheng & Chi, 2015).

The purpose of this study is to determine if the U.S. millennial consumers are more willing to purchase sustainable denim jeans with an attached LCA label. Through investigation of consumers' purchase intentions, we are able to reveal if millennial consumers are willing to learn more about the environmentally friendly attributes of sustainable denim jeans and how this sustainability information based on LCA outcomes affects their purchase decision-making.

*Methodology and Data Collection.* This study used a qualitative method, which entailed the practice of snowball sampling in order to recruit 12 millennial-aged U.S. consumers to interview. Data regarding consumers' environmental knowledge, environmental concern, and their purchase intentions toward the LCA labeled denim jeans were collected through semi-structured interviews. Interviews that lasted approximately 30 minutes were audio recorded and transcribed for the coding process for theme determination.

Figure 1. LCA Denim Jean Labels



Three developed LCA labels are showed in Figure 1. .

*Results and Discussion.* The interviewees were white (33%), Asian (50%), and Hispanic (17%), with ages ranging from 21 to 28 years old (50% male, 50% female). On average they own, 8 pairs of jeans, retailing from \$40 to \$120. All respondents expressed moderate to high concern for the environment and stated that environmental protection is one of the top issues facing the world today. When asked about their knowledge of the impact of apparel supply chain on the environment, participants indicated that they were aware that there are some adverse environmental impacts, especially in regards to chemical use and material waste, but that they had little knowledge about specific details.

Participants reported that regular product labels that include information like country of origin, fiber content, and care instruction had little influence on their purchase decision-making for denim jeans and didn't spark much sustainability related consideration. After exposure to each of three developed LCA labels for a pair of denim jeans, all the participants indicated that they found the information provided to be valuable and important, and helped them think about the sustainability issues while purchasing denim. However the participants also stressed they would not buy a pair of jeans only because of the sustainability attributes conveyed by the LCA labels but also other key factors such as style, fit, comfort, function, and price etc. Half of the interviewees preferred the label with more textual information, and 33% preferred the simple label with logos and a Higg Index score. Most of the participants suggested that if information about sustainable denim manufacturing processes could be provided in an easily accessible and readily available mode on product labels, it would impose more positive impact on their purchase decision making. Further, all but one interviewee reported that they would be willing to pay at least a 10% premium for sustainably produced denim jeans compared to the alternatives.

*Conclusion and Implications.* These findings are critical to marketers and brands because consumers indicated that they would like product label to provide more sustainability related information and would be willing to pay premium for denim jeans produced in an environmentally friendly way. Further, the findings reveal that sustainable apparel manufacturing information is more valuable and influential when presented in an easily accessible way as consumers do not carefully read product labels when making their purchase decisions. Therefore, it is recommended that future studies investigate product labeling methods for capturing the attention of consumers to create more effective product labels. Additionally, researchers should investigate the most efficient way to deliver information on product labels that encourages consumers to purchase sustainable apparel products for environmental protection. This study is limited by its narrow geographic range, with participants coming from the north western U.S. Additionally, the age of interviewees, while limited to millennials, only spanned a seven year range. This study can be expanded by interviewing millennial consumers from different regions in the U.S. and obtaining a wider sampling of ages throughout the millennial generational bracket.

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